

Appl. No. 10/685,828
Docket No. H1799-00210
Reply to Final Office Action of May 23, 2005

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 2. (Cancelled)

3. (Currently Amended) A thermal energy management system according to claim 26 ~~[[1]]~~ including a second thermal bus that is operatively engaged with said first thermal bus so as to transport thermal energy from said first thermal bus to ~~[[a]]~~ said heat sink.

4. (Currently Amended) A thermal energy management system according to claim 3 wherein said second thermal bus comprises a second loop thermosyphon.

5. (Cancelled)

6. (Currently Amended) A thermal energy management system according to claim 26 ~~[[1]]~~ wherein said ~~planar~~ planar heat pipe comprises a vapor chamber that is defined between a top wall formed from a substantially uniform thickness sheet of a thermally conductive material and a bottom wall

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comprises a substantially uniform thickness sheet of a thermally conductive material.

7. – 8. (Cancelled)

9. (Currently Amended) A thermal energy management system according to claim 26 ~~[[1]]~~ wherein said thermal bus comprises at least two loop-thermosyphons that are thermally engaged with said ~~planer~~ planar heat pipe so as to bus thermal energy to a thermal energy sink.

10. (Currently Amended) A thermal energy management system according to claim 26 ~~[[1]]~~ wherein said thermal bus comprises a loop thermosyphon formed from a closed tube having a continuous internal passageway and wherein said tubular evaporator portion includes an integrally formed wicking layer disposed on the surface of said tube that defines said internal passageway adjacent to said evaporator portion and said ~~planer~~ planar heat pipe.

11. (Original) A thermal energy management system according to claim 10 wherein said wicking layer comprises sintered copper powder having an average thickness of about 0.5 mm to 2.0 mm.

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12. (Currently Amended) A thermal energy management system according to claim 9 wherein said at least two loop thermosyphons each comprise[[s]] a condensing portion positioned in spaced away relation to said tubular evaporator portion.

13. (Currently Amended) A thermal energy management system according to claim 26 [[1]] wherein a portion of said thermal bus is arranged in intimate thermal contact with a wall of a support chassis.

14. (Original) A thermal energy management system according to claim 13 wherein said thermal bus is maintained in position by a simple fastening system so that it may be disassembled from an underlying electronic system and components.

15. (Original) A thermal energy management system according to claim 13 further comprising a second thermal bus positioned adjacent to a condensing portion of said thermal bus.

16. – 17. (Cancelled)

18. (Currently Amended) A thermal energy management system according to claim [[17]] 20 wherein said evaporator plate provides a physical

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and thermal interface between a top wall of said ~~planer~~ planar heat pipe heat spreader and said evaporator tube of said loop-thermosyphon.

19. (Cancelled)

20. (Currently Amended) A thermal energy management system according to claim 49 comprising:

a planar heat pipe heat spreader that is thermally engaged with at least one heat generating component; and

an evaporator plate positioned between a portion of said planar heat pipe heat spreader and an evaporation tube of a loop thermosyphon so as to transport thermal energy from said planar heat pipe heat spreader to a heat sink,

wherein at least one groove is formed in a top surface of said evaporator plate so as to receive and cradle said evaporator tube of said loop-thermosyphon and further wherein said evaporator plate is formed from a substantially uniform thickness sheet of a thermally conductive material that is sized and shaped to cover a portion of said top surface.

21.-25 (Cancelled)

26. (Currently Amended) A thermal energy management system comprising:

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a ~~planer~~ planar heat pipe that is operatively engaged with at least one heat generating component wherein said planar heat pipe (i) encloses a two-phase vaporizable liquid serving as a working fluid, and (ii) is sized and shaped so as to spread thermal energy over an area larger than the area of said at least one heat generating component;

an evaporator plate having a bottom surface thermally engaged with said heat ~~planer~~ planar pipe and a top surface having at least two grooves; and

a thermal bus including at least two tubular evaporators of a loop-thermosyphon wherein each of said tubular evaporators is received in, and thermally coupled to one of said at least two grooves so as to transport thermal energy from said evaporator plate and said ~~planer~~ planar heat pipe to a heat sink.